

Center for Chemical Separations

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Established as a center in 1987. Researchers with backgrounds in organic chemistry, inorganic chemistry and chemical engineering are studying the full development of a new ligand bonded silica gel technology. The resulting products are used in a variety of separation systems. A few applications of center technology include precious and base metals refining, heavy metal and organic clean-up and nuclear waste management.

Overview	Technologies	Status	Economic Impact
Current State Contract \$50,000	* Pilot plant scale up for individual separations	* Methodology for precious metals separations developed	* Created spin-off company IBC with 6 jobs & sales projected \$800K in 1990
Matching Funds \$328,040	* Individually designed macrocycles for molecule separations	* Selling product to industry	* Company attracting many sources of growth capital
Cumulative \$1,794,580	* Patented technique for attaching macrocycles to solid substrate allows for reuse	* Need to develop capability in gas, high purity materials and biological separations	* Process for separating platinum rhodium represents a 40-60% cost reduction to the industry
Industry Jobs Created 24	* Ligand bonded silicagel (Superlig) technology	* Capability in environmental, analytical & precious metals markets	* Potential for developing multi-million dollar system to clean up accumulated nuclear waste
Center Related Jobs 16	* Researching use of superlig materials to remove selected components from highly acidic radioactive waste	* Battelle Pacific Northwest Laboratories are funding	* Interacted with 8 Utah companies
Benefiting Utah Companies --	* Areas for Technology Application include:	* Set up pilot plants in 4 of the largest precious metal refineries in the USA. Metals of interest are rhodium, platinum and palladium	
Spin-off Utah Companies 1	1. Precious and base metals refining, mining & recycling	* Negotiations completed for a grant from Thikol to develop materials for the removal of ppm amounts of heavy metals from culinary and waste water streams	
Patents Applied 13	2. Heavy metal and organic clean-up from industrial effluents in water and air	* Recipient of a Phase III SBIR Grant from Metre-General, Inc.	
Patents Issued 5	3. Analytical scale separation species of industrial, medical and environmental importance	* Superlig materials capable of making quantitative separations	
License Agreements 1	4. Nuclear waste management		